



U.S. Global Change
Research Program

OUR CHANGING PLANET

The U.S. Global Change Research Program for Fiscal Year 2020

A Report by the U.S. Global Change Research Program
and the Subcommittee on Global Change Research

A Supplement to the President's Budget for Fiscal Year 2020

This material was developed with federal support through the U.S. Global Change Research Program under National Aeronautics and Space Administration Award No. NNH15CN83C.

The official and complete version of this report is the PDF, available at:
<https://www.globalchange.gov/browse/reports/our-changing-planet-FY-2020>

Suggested citation:

U.S. Global Change Research Program. 2020. *Our Changing Planet: The U.S. Global Change Research Program for Fiscal Year 2020*. Washington, DC, USA. doi: [10.7930/ocpfy2020](https://doi.org/10.7930/ocpfy2020)

Since 1989, the U.S. Global Change Research Program (USGCRP) has submitted annual reports to Congress called *Our Changing Planet*. The reports describe the status of USGCRP research activities, provide progress updates, and document recent accomplishments. This Fiscal Year 2020 edition of *Our Changing Planet* provides a summary of programmatic achievements, recent progress, and budgetary information for USGCRP. It thereby meets the requirements set forth in the U.S. Global Change Research Act of 1990 (Section 102, P. L. 101-606) to provide an annual report on federal global change research priorities and programs. It does not express any regulatory policies of the United States or any of its agencies, or make any findings that could serve as predicates for regulatory action.

***Our Changing Planet* Editorial and Production Team**

Anthony Flowe – Engagement and Communications Associate, USGCRP National Coordination Office
Alexa Jay – Senior Science Writer/Editor, USGCRP National Coordination Office
Katie Reeves – Engagement and Communications Lead, USGCRP National Coordination Office

Subcommittee on Global Change Research

Leadership

Wayne Higgins – Chair, Department of Commerce
Michael Kuperberg – Executive Director, USGCRP

Principals

John Balbus – Department of Health and Human Services
Pierre Comizzoli – Smithsonian Institution
Ben DeAngelo – Department of Commerce
Gerald Geernaert – Department of Energy
Paul Gunning – U.S. Environmental Protection Agency
Noel Gurwick – U.S. Agency for International Development
William Hohenstein – Department of Agriculture
Jack Kaye – National Aeronautics and Space Administration
Ben Petro – Department of Defense
Jim Reilly – Department of the Interior
Loren Smith – Department of Transportation
Trigg Talley – Department of State
Maria Uhle – National Science Foundation

Executive Office of the President Liaisons

Tracie Lattimore – Executive Director, National Science and Technology Council
Kimberly Miller – Office of Management and Budget

TABLE OF CONTENTS

THE U.S. GLOBAL CHANGE RESEARCH PROGRAM	1
IMPLEMENTING THE 2012–2021 NATIONAL GLOBAL CHANGE RESEARCH PLAN	2
Advancing Science	2
Highlight 1. Unprecedented observations in the Southern Ocean help improve global climate models	2
Highlight 2. Scientists investigate the effects of carbon emissions from thawing permafrost soils	3
Highlight 3. Researchers reconstruct a new history of ocean warming	3
Highlight 4. New data infrastructure helps build virtual ecosystem of Earth science information	4
Highlight 5. Collaboration identifies pathways to enhance social science integration in federal global change research	4
Informing Decisions	4
Highlight 6. Interagency data products and research inform hurricane response and recovery in the Carolinas	4
Highlight 7. Drought and wildfire research supports adaptation planning in the western United States	5
Highlight 8. A new forecast tool helps the public avoid toxic algal blooms	6
Highlight 9. Flood mapping helps planners visualize the future of California’s coast	7
Conducting Sustained Assessments	8
Highlight 10. Assessment products outline climate-related risks and response actions	8
Highlight 11. A major interagency assessment evaluates carbon cycle science and impacts on society	9
Supporting International Global Change Science	10
Highlight 12. A new collaboration on data and decision-making supports sustainability in the Amazon Basin	10
Highlight 13. Interagency efforts help lead a new international climate and health research initiative	10
Highlight 14. USGCRP supports major international global change assessments	10
BUDGETARY INFORMATION	11
APPENDIX I. USGCRP MEMBER AGENCIES	12
REFERENCES	18